

CALCAREOUS SANDY LOAM

General Description: *Calcareous sandy loam becoming more clayey and calcareous with depth, grading to Class IIIA carbonate*

Landform: Dunefield of closely spaced parallel sandhills with some broader flats.

Substrate: Medium to coarse grained massive Tertiary sediments (Parilla Sand equivalent).

Vegetation: Mallee



Type Site: Site No.: MM144
Hundred: Allen
Section: 2
Sampling date: 23/02/1999

1:50,000 mapsheet: 6928-1 (Caliph)
Easting: 445000
Northing: 6163970
Annual rainfall: 280 mm average

Flat. Soft surface, no stones.

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown soft moderately calcareous sandy loam with platy structure. Clear to:
10-33	Reddish brown firm massive highly calcareous fine sandy clay loam. Clear to:
33-44	Reddish brown hard massive very highly calcareous light medium clay with 20-50% fine carbonate segregations. Clear to:
44-64	Yellowish red hard very highly calcareous light medium clay with weak polyhedral structure and 20-50% fine carbonate. Gradual to:
64-140	Yellowish red hard very highly calcareous light clay with weak subangular blocky structure and 20-50% fine carbonate segregations. Diffuse to:
140-170	Yellowish red and pale olive friable massive coarse sandy clay loam with 2-10% fine carbonate segregations.



Classification: Epihypersodic, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, loamy/clayey, deep



Summary of Properties

Drainage: Moderately well drained. Soil never remains saturated for more than a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low, as indicated by the exchangeable cation data. Regular phosphorus applications are essential (levels are satisfactory at sampling site). Nitrogen levels depend on cropping history and legume status of pastures. Zinc and copper deficiencies occur occasionally, and are exacerbated by the free carbonate in the soil. Zinc is marginally deficient at the sampling site. Organic carbon concentration is low.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: Not recorded. Estimate 44 cm in pit.

Barriers to root growth:

Physical: There are no physical barriers.

Chemical: High pH and sodicity from 44 cm prevent deeper root growth.

Waterholding capacity: Approximately 60 mm in the potential rootzone.

Seedling emergence: Satisfactory

Workability: Firm surface is easily worked.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	7.5	6.9	< 0.1	0.08	0.5	0.81	35	677	-	1.2	0.5	-	10.0	0.4	10.0	6.1	1.2	< 0.1	1.7	1.0
0-10	8.2	7.5	0.3	0.97	9.2	0.79	29	916	-	1.3	0.4	-	4.7	0.4	11.4	7.2	1.3	< 0.1	2.4	0.9
10-33	8.5	7.8	8.0	0.12	1.1	0.46	1	526	-	1.3	0.7	-	2.6	0.1	13.6	10.1	3.3	0.23	1.6	1.7
33-44	9.3	8.1	18	0.46	3.0	0.37	6	353	-	3.8	0.8	-	1.3	0.1	14.2	6.1	5.3	2.5	1.1	17.6
44-64	9.7	8.4	33	1.06	6.9	0.20	5	457	-	12.6	0.9	-	0.6	0.1	15.5	2.4	5.0	8.3	1.6	53.5
64-140	9.6	8.2	33	1.11	7.2	0.15	1	458	-	16.5	0.8	-	0.7	0.2	12.9	2.1	3.8	7.2	1.3	55.8
140-170	9.5	8.6	1.5	0.89	5.8	0.10	1	341	-	15.4	0.3	-	0.6	0.1	9.8	1.1	3.0	4.9	0.72	50.0

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.
CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.
ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.

Further information: [DEWNR Soil and Land Program](#)

